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ABSTRACT

The Scholastic Aptitude Test (SAT) scores of the 1960 to 1974 valedictorians and salutatorians from a sample of public, experimental, and private schools were studied. The experimental schools were specifically chosen for demographic stability. The comparison schools were also selected for stability, but by less stringent criteria. For the students from the experimental schools, there was no evidence of a decline in either SAT verbal or mathematics scores. Instead, the trend has been toward very modest annual increases. For the comparison group, the data indicated an initial period of increase, followed by a decline. Each of these two special samples differed significantly from the SAT-taking population. The scores of the private school students, however, showed a decline similar to the total SAT population. This study supports the view that the score decline is a consequence of social change and social forces, but cannot establish this as a conclusion. The questionnaire used in data collection is included. (Author/EVH)

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A Feasibility Study of the SAT Performance of High-Ability Students from 1960 to 1974 (Valedictorian Study)

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ABSTRACT

The decline in Scholastic Aptitude Test (SAT) averages for the annual candidate population is made difficult to interpret by the complex possible causes. Changes in tests, in populations, in schools and in social customs may all logically make contributions to the decline. The present study sought to avoid some of these complexities by defining a sample of more able students in schools that were specifically selected for stability over the time interval studied.

The study relied upon the availability of school records and upon extensive cooperation by the schools. An initial unsuccessful effort at data collection led to a reformulated inquiry directed specifically at valedictorians and salutatorians. This redirected inquiry succeeded in securing annual samples of approximately 30-80 students in each even-numbered year from 1960 to 1974, in each of three samples: "experimental" schools, specifically selected for high levels of demographic stability, "comparison" schools, selected for intermediate levels of demographic stability, and a selected group of private schools.

The analysis indicated:

1. Valedictorians and salutatorians of experimental schools specifically selected for demographic stability do not show a score decline, and in fact are best described by linear curves with modest increases.
2. Comparison schools show decline but on a pattern statistically different from that of the total Board population.
3. The private schools show a decline not statistically different from that of the total Board population.
4. The Scholastic Aptitude Test is sufficiently sensitive to ability at the upper levels of scholastic performance to differentiate valedictorians and salutatorians in samples of these sizes.
5. While these select students show sex differences similar to those in the total population, there is no evidence of a sex-rank interaction indicating that it is any harder or easier to become a valedictorian or salutatorian depending on sex.

No straightforward interpretation of any data concerning the score decline is possible. The present study supports the view that the score decline is a consequence of social change and social forces, but cannot establish this as a conclusion.

INTRODUCTION

The four major factors that bear logically on the Scholastic Aptitude Test (SAT) score decline are (1) changes in the content of the tests or in the procedures by which raw scores are related to scaled scores; (2)

Authors' note: Richard Harrison was responsible for data-processing operations and contributed to the design of the analysis. Don Rubin provided extensive guidance and consultation in the design and execution of the analysis.

changes in the populations taking the test, shifts in the number and nature of college aspirants; (3) changes in the schools and their curriculums; and (4) broader changes in life styles -- toward TV, away from reading, etc.

It is impossible to study these factors and the relationships among them clearly. They intersect in too many complex ways. Particularly perplexing are questions concerning the possible changes in the population taking the test. During the critical time period from 1960 to the present there has been a broadening of access to college, so that a given student of today is much more likely to seek entrance than a comparable student in 1960. During the same interval, the postwar population "bulge" has increased the numbers of potential students. These factors combine to make year-to-year comparisons difficult. A common hypothesis concerning the decline builds on this expansion of access to college and attributes the decrease in average scores to the influx of large numbers of less able candidates. Data tend to show, however, that there is an absolute decrease in the incidence of high scoring students. Such a finding runs counter to the influx of "less able candidates." It is difficult to find reliable information upon which to base an analysis.

It seemed appropriate, however, to anticipate greater stability, in terms of population characteristics and perhaps in terms of school factors, for higher-ability students as a group. By the beginning of the period of decline, 1960 or so, most of this group was already oriented toward college, so that in many schools a very large proportion of them took the SAT. In addition, motivation to perform well in school is probably stronger and more uniformly distributed for a select group of more able students than it is in the larger populations defined by the annual candidate groups. There is little reason to suspect a marked year-to-year variation in the quality of these superior students. For these reasons, a sample made up of the academically most able group was expected to exhibit greater stability in SAT scores than the group as a whole.

While able students as a group can be held to show less variations than the total group, it is possible to define a subsample with an even greater potential for stability by taking into account school characteristics. A focus on high ability students is essentially normative: the top 1 percent or 5 percent, for example, of a class. This normative definition will be most stable if the sample avoids schools that experienced a great deal of change during the period in question. For example, schools that were redistricted or are combined with other schools during the critical time period would be expected to have the level of their top students altered. It seemed unlikely that any school was so free of change during the 15-year period 1960-1975 that one could treat the classes as equivalent. But if a school was in the same building, was serving roughly the same size student body, was in a community of somewhat stable size and with a community economy based on one or two major and enduring industries, then greater stability in the incidence of ability levels from year to year might reasonably be anticipated. Restricting a sample to schools

with these special selective characteristics was likely to enhance comparability further over time.

The study, then, was an effort to define a more stable subpopulation and to examine score-mean patterns for this more stable group. The study obviously could not resolve the many ambiguities that confront an interpretation of the score decline. However, its focus on the higher-ability student gives it at least a face validity, a greater freedom from such perplexing problems as the possibility of declining motivation to do well on tests or to attend college. If restriction to a more stable subgroup does, in fact, alter the pattern of score decline, then a certain component of the anxiety about the decline could probably be allayed.

At the time it was proposed the study seemed dependent upon the availability of records and was, therefore, described as a feasibility study, seeking to find about 200 schools with data available over the years in question. In addition to the problems of the availability of records, however, there was some uncertainty about the capacity to define a demographically stable group of schools meaningfully. For both sample selection and data collection, therefore, there was clearly a feasibility exploration.

PROCEDURE

The design called for a basic sequence of (1) sample selection, (2) data collection, (3) analysis in terms of feasibility, and (4) analysis in terms of implications for the decline. The first three topics are considered in this section. The empirical findings and their evaluation in terms of implications for the decline are presented in a section devoted to results.

SAMPLE SELECTION

The feasibility of defining a sample with sufficient rigor to permit generalization to larger domains was explored in telephone communication with population experts at the National Center for Education Statistics and at the Bureau of the Census. In each case, while there was interest in the study, there were warnings concerning the wide-ranging population shifts that characterized the United States during the period in question.

These warnings led to the total exclusion from consideration of the block of Southern states, because of the extensive mobility of the black populations during the years in question. Similarly, while pockets of large cities might demonstrate apparent population stability in size, the pattern of neighborhood flux was judged to be so great that no single big city area could meaningfully meet the desired criterion of stability.

In response to these counsels, the study arbitrarily avoided certain

regions of the country (states, parts of states) suggested by the experts as demonstrating a lower degree of stability than others. The regions selected were located in 10 states: California, Idaho, Illinois, Indiana, Michigan, Montana, New York, Ohio, Pennsylvania, and Washington. While certain of these states obviously have densely populated areas, the experimental schools were chosen with restrictions that avoided them. Thus, within the regions, each school district was required to conform to the following criteria:

1. population 2,500-10,000
2. a high proportion of people living in the same house in 1970 that they had been living in in 1965
3. at least 50 miles from a major metropolitan area
4. fairly heavy, fairly continuous use of the SAT, as indicated by College Board records.

A few schools were selected that failed to meet these criteria perfectly but were judged to have balancing characteristics. Schools selected by applying the criteria above were called experimental schools. In all, 80 were chosen.

While no control group was possible, it was felt that the interpretation of findings would be made clearer by another sample that varied the criteria. Accordingly, a comparison sample was defined, consisting of schools that were located in the same states, and the same regions within states, as were the experimental schools. There were 80 comparison schools. Their characteristics were:

1. population 10,000-50,000
2. a requirement that a low proportion of people be living in same house 1965-1970
3. a requirement of a "suburban" relationship to some metropolitan area
4. substantial history of students taking the SAT.

In keeping with its role as a feasibility study and in view of strong interest in private schools as subject to or free from decline, a small sample of these schools was also included. Again, an effort at stability was attempted. No obviously changed institution was selected. However, it was recognized that these schools, which function in most cases without a specific geographic base, can be subject to quite dramatic shifts in character without any convenient external indicator of the change. In all, some 70 private schools were selected, of which 35 were single sex, 35 coeducational.

Information concerning the status of schools and school personnel is constantly in need of revision. A telephone inquiry was made to the schools to be contacted, alerting them to the planned communication from the project, establishing the appropriate persons to write to, and verifying the general information about the schools. This initial inquiry led to some sample attrition immediately, as schools were reported to be closed or in other ways inappropriate for the study, e.g., a recent redistricting. The final groups consisted of 78 experimental, 72 comparison, and 66 private schools.

DATA COLLECTION PHASE I

The principal factors that governed the design of instruments for the data collection in this study were the questions of student anonymity, the proper depth of information collection, and the ability of schools to supply information.

The problem of anonymity was generally avoided in the initial mailing that sought simple rank in class for unspecified individuals. However, there was interest in extending the study to a more clinical basis by contacting individual students, and in verifying or supplementing school information with information derived from College Board files. Accordingly, a special announcement in the initial mailing invited the schools to supply the names of the valedictorian and salutatorian, pointing out that this disclosure would be consistent with the policy of most major school systems, and stressing that the information could be seen as falling in the public domain.

The initial planning and review discussions of the study emphasized the desirability of a depth sampling of the schools, with an emphasis on a sizable group of the most able students, and an interest in the performance at other levels within class rank. This viewpoint was reflected in the proposal's description of the information that would be sought:

"The schools would provide information on the top 10 percent of each graduating class, as determined by school records. In addition, there would be a request for information on individuals falling in the percentile ranks from 17.5 to 22.5, from 27.5 to 32.5, and from 37.5 to 42.5. In all, records for approximately 25 percent of a graduating class would be requested. While the full design of an analysis would await some determination of the availability of data, the study would contrast SAT mean score patterns for (a) valedictorians, (b) top 5 percent, (c) top 10 percent, (d) those at the twentieth percentile, (e) those at the thirtieth percentile, and (f) those at the fortieth percentile."

However, it was recognized that the principal barrier to such indepth sampling would be the ability of the schools to cooperate. Balancing the needs of this study both to yield data and to explore the schools' capacity to participate, the 80 schools on each of the experimental and contrast groups were randomly assigned to subgroups receiving requests for 10 percent, 20 percent, or 30 percent information. Forty schools (50 percent of the sample) were designated as 10 percent schools, 20 schools were 20 percent schools, 20 schools were 30 percent schools.

Appendix A includes the materials sent to the schools during this first phase of the data collection. These were the letter of invitation to participate, a brief outline of the study, two forms to be used to characterize the community, and forms for supplying student data. These latter forms varied from school to school depending on the depth of sampling attempted.

Because the study was launched in the spring, the initial inquiry to the schools was sent in May. Response to this inquiry was poor. In July, a telephone survey of approximately 25 percent of the sample was carried out. This survey confirmed the fact that the general pressure of school activity in late spring, coupled with the staff reductions during the summer, had made it difficult for schools to respond.

It also confirmed that even the 10 percent sample was too burdensome a request for most schools. The preparation of the data demanded a knowledge of rank in class in, for example, 1960. This information was simply not available.

DATA COLLECTION PHASE II

In conjunction with Board staff and through contact with panel members, it was learned that a restriction to the top two students in any class, the valedictorian and salutatorian, would be an acceptable modification. This conception of the study as a sample of elite "top few" had been a basic one, winning the project the informal label of "valedictorian study." In addition, there had been the specific inquiry concerning the valedictorians and salutatorians included in the initial mailing to the schools. This inquiry had attempted to secure the names of valedictorians and salutatorians in the service of possible personal followup, but also to provide a check on the adequacy of communications, by confirming the reported scores for these students in SAT files.

The reduced level of inquiry was believed to be more manageable for the schools, and new materials for a mailing were prepared. These new materials essentially reestablished communication, explained the revision in emphasis, and reinvited participation. The need for a second data collection phase put the project much behind schedule. Also, there was some need to adjust the project schedule to conform to the scheduled meetings of the advisory panel. Since many schools did not resume operation until mid-September, and since the autumn meeting of the advisory panel was set for mid-November, it was decided to supplement the second mailing with a program of telephone calls. This was done in early and mid-September.

Appendix B presents copies of the revised letter, a description of the study, and copies of the form that was used in the second mailing. As a result of the renewed effort, responses were obtained from 58 of the experimental schools, from 45 comparison schools, and from 42 private schools. In all, reports on 1,592 students were secured.

ANALYSES IN TERMS OF FEASIBILITY

This study is somewhat reduced in value as a measure of feasibility by two of the characteristics it was given at the beginning. The first of these was an attempt at depth sampling, at winning cooperation from the schools in providing information on students whose rank in class was in lower percentiles, such as the 20th to 25th percentile band. In the planning stage of the study, there was extensive interest in these lower strata as possibly being more reflective of the social changes in the college-going population than samples restricted to valedictorians and salutatorians would be. The intention was to provide information on the

impact on candidate means of increasing numbers of lower-strata students over the years. As mentioned earlier, hypotheses about an influx of less able candidates have frequently been advanced as either total or partial explanations of the decline. A depth survey would help to clarify and evaluate these hypotheses.

The second characteristic of the study that diminished its feasibility was its timing late in the school year. This was dictated by the schedule of panel activity and, in part, by the problems of sample definition and materials preparation.

Each of these characteristics worked to the disadvantage of the study. The burden of data collection in the depth model proved too great for the schools. Even at the 10 percent level, school personnel described the task as difficult. Given the special character of the sampling none of these schools were very large. But even for these moderate-sized schools the infeasibility of this in-depth collection is established. With regard to schedule, a better initial response might have been possible had the timing been more convenient for the schools.

The foregoing remarks focus on feasibility as reflected in any problems of winning school participation. The initial inquiry was not successful, yielding only 38 replies to 216 inquiries by July 15, 1976, of which a number were acknowledgments of receipt rather than submission of data. The redefined study enjoyed a much greater response, with a total of 124 schools replying. Not surprisingly, the study seems to have demonstrated the relative accessibility of salutatorian and valedictorian records, in contrast to the records of lower ranked students.

Another aspect of feasibility, partially independent of winning school cooperation, concerns the ability of the schools to supply this type of information even if they are willing to cooperate. The N's in Tables 1 and 2 provide some indication of the severity of these problems. These tables are based on the reports of schools. It can be seen that the information in 1960 was available for only about 35 percent of the cases, and about 70 percent was available in later years. Not unnaturally, some schools had policies against the retention of data for longer periods than the schools themselves found useful. A number of problems reduce such data, such as the identification of certain individual valedictorians or salutatorians as aberrant cases, because of such characteristics as not being a native speaker of English. The cooperation of the schools in pointing out such limits on their data was greatly appreciated.

In spite of some information loss, the record of the present study suggests that it would be possible to carry out a larger study, drawing a more random or representative sample of schools and requesting valedictorian and salutatorian data only. The timing of this inquiry is important, for it seems prudent to avoid an end of the year schedule. In addition, such an investigation should be planned to include extensive telephone contact with the schools. The experience of the present study strongly suggested that specific telephone inquiry greatly increased response.

IMPLICATIONS FOR THE DECLINE

Although this study was conducted as an investigation of the feasibility of obtaining appropriate data, the data collection was large enough to offer interpretable findings on the presence or absence of decline in the three special samples. These findings must be viewed as part of the larger context of the total effort to understand decreasing Scholastic Aptitude Test means. The essential role for the study is as a supplement or companion to other reports, intended to contribute to an overall assessment of the reasonableness of considering complex social changes in the schools as a factor in the phenomena of decline.

The basic questions to be considered in this study would seem to be:

1. Does there appear to have been a decline in the average scores of valedictorians and salutatorians in these special samples over the years from 1960 to 1974?

2. If there is a decline in these average scores, how does this compare with the decline reported for the College Board candidate population? Does it differ in size, or in the year of onset? Are there differences between score patterns observed for the SAT-Mathematical and the SAT-Verbal?

3. Do the trends in the average scores for valedictorians and salutatorians appear to be different among the three samples of experimental, comparison, and private schools? Do these apparent similarities and differences relate logically to what is known about the special characteristics of these samples?

Tables 1 and 2 present a brief summary of the essential data on averages across years. Table 1 shows results for the SAT-V, and Table 2 for SAT-M, for each sample in the study and for these samples combined. In each table, data are also provided on the averages in the same years for the college-going population.

The schools did not actually report the particular SAT administration at which a student was tested, so that the average for a given year for the sample groups may include testings from the junior year, if that was the only SAT taken. The effect of this practice of attributing all sample SAT scores to the year of graduation was felt to be minor and to lead to no systematic bias or error.

Figures 1 and 2 show the information concerning means in graphic form. These curves for the sample groups are, of course, less regular than are those for the total population. In all probability this is a function of sample size, but there are common characteristics for the three sample curves: "peaks" in 1966 and again in 1968 for both SAT-Verbal and SAT-Mathematical, and a "peak" in 1972 for the SAT-Mathematical curves. There is no ready explanation for such peaks, but they are more than random fluctuations, being confirmed as significant variation by the statistical analysis.

Although the year-to-year fluctuations make a visual interpretation difficult, the verbal curves seem to offer more evidence of a decline than the mathematical ones. Among the groups the curves for the experimental group seem to show less of a tendency for decline.

Table 3 presents the standard deviations for the various annual samples. These range from a low of 69 to a high of 104, with the bulk of

Table 1. SAT-Verbal Means, Valedictorians and Salutatorians

Year	Experimental schools		Comparison schools		Private schools		Combined sample		College Board candidates*
	Mean	N	Mean	N	Mean	N	Mean	N	Mean
1960. . .	590	32	593	29	656	54	622	115	477
1962. . .	572	50	647	43	641	64	621	157	473
1964. . .	612	63	651	55	652	67	638	185	475
1966. . .	588	68	634	64	653	74	626	206	471
1968. . .	606	82	669	69	653	72	641	223	466
1970. . .	601	96	645	74	638	75	626	245	460
1972. . .	596	83	634	76	623	75	617	234	450
1974. . .	590	82	618	72	630	73	612	227	440
Total N .		556		482		554		1592	

*From Breland, Hunter M., "The SAT Score Decline: A Summary of Related Research." Report to the Advisory Panel on Score Decline, January 1976.

Table 2. SAT-Mathematical Means, Valedictorians and Salutatorians

Year	Experimental schools		Comparison schools		Private schools		Combined sample		College Board candidates*
	Mean	N	Mean	N	Mean	N	Mean	N	Mean
1960. . .	627	32	621	29	654	54	638	115	498
1962. . .	618	50	663	43	640	64	639	157	498
1964. . .	626	63	671	55	679	67	659	185	498
1966. . .	625	68	674	64	663	74	654	206	496
1968. . .	647	82	678	69	662	72	662	223	494
1970. . .	627	96	668	76	649	75	646	247	488
1972. . .	649	81	679	78	652	75	660	234	482
1974. . .	645	82	666	74	650	73	653	229	478
Total N .		554		488		554		1596	

*From Breland, Hunter M., "The SAT Score Decline: A Summary of Related Research." Report to the Advisory Panel on Score Decline, January 1976.

Figure 1. Average Scores for Each Sample Group and for College Board Total Population, SAT-V

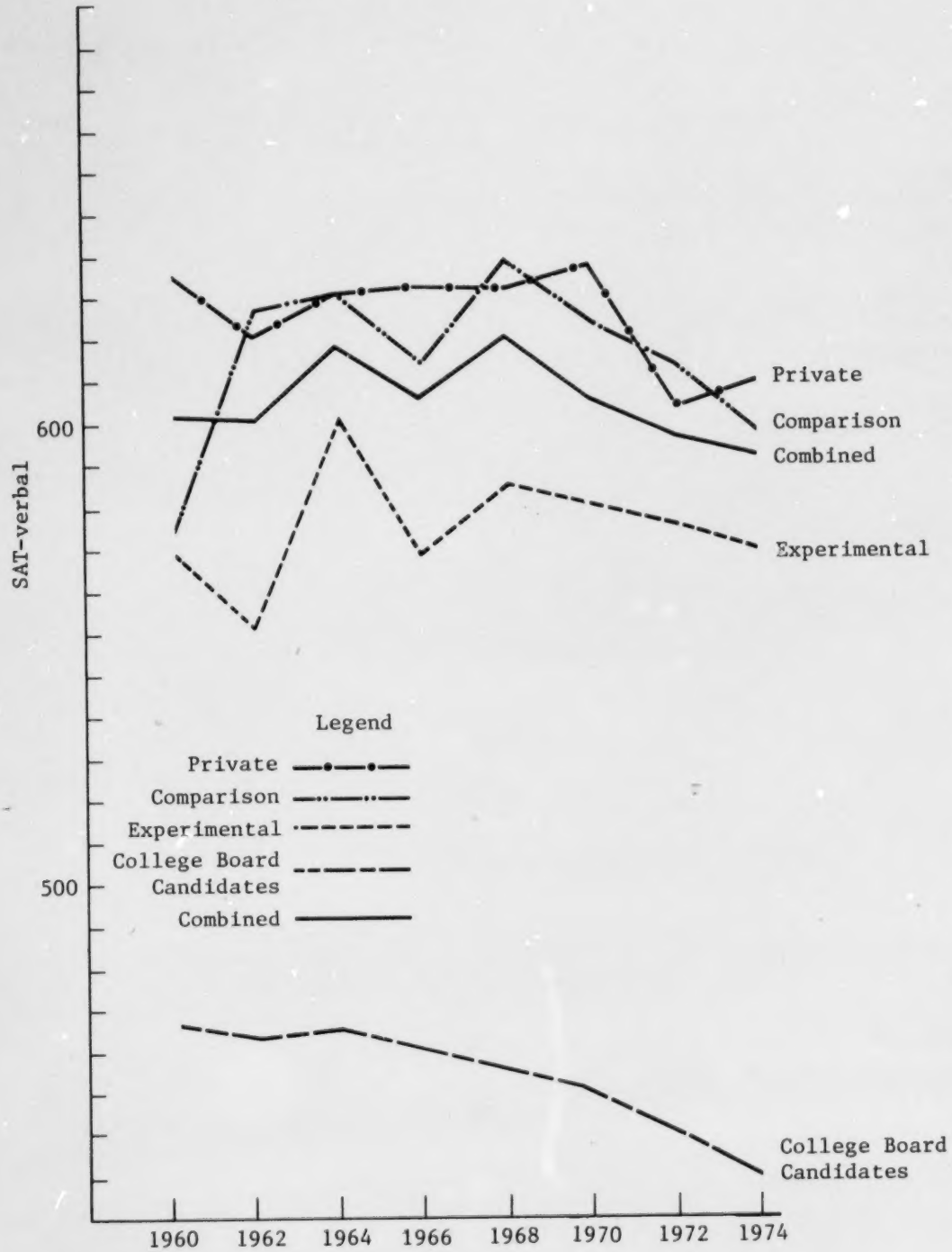
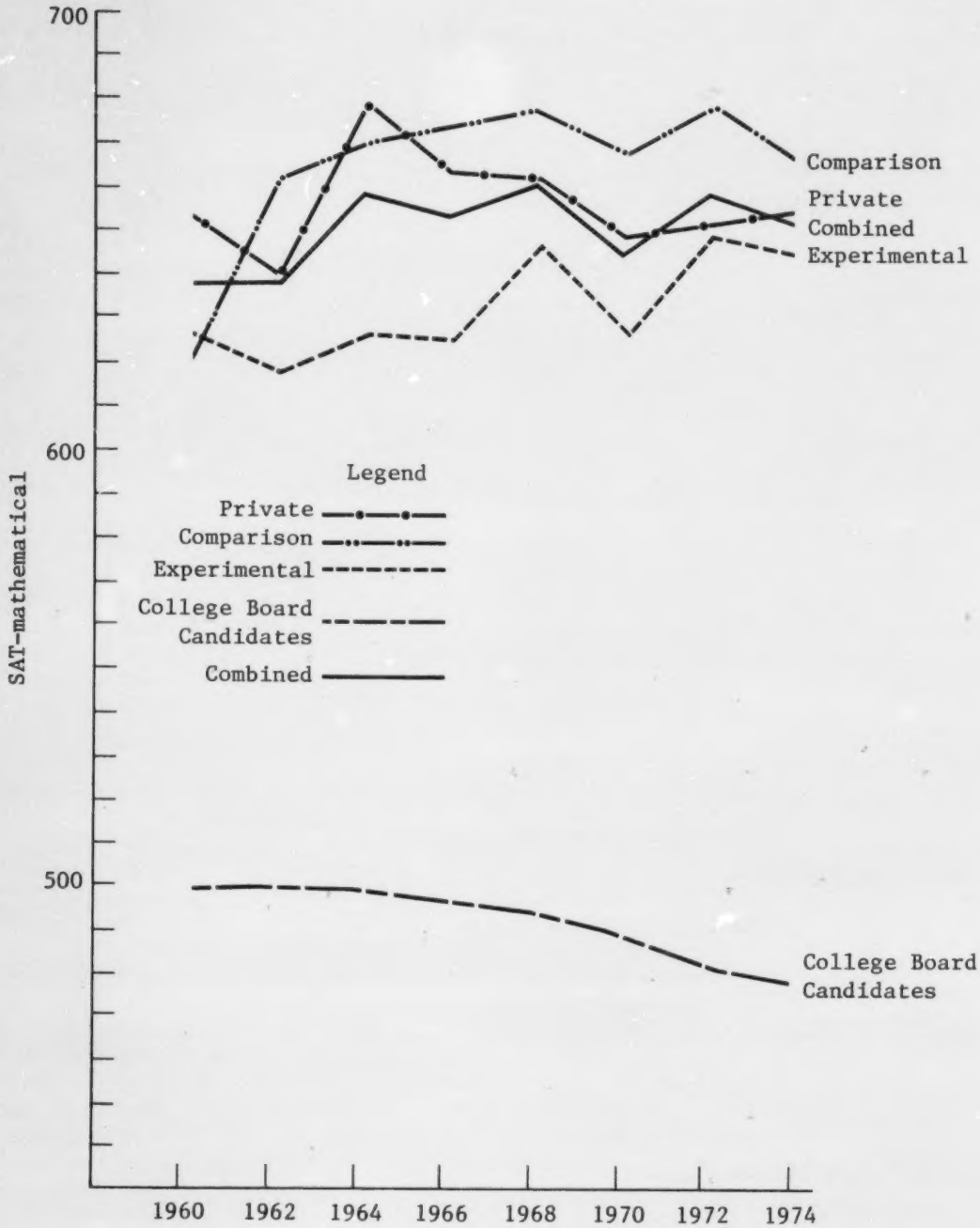


Figure 2. Average Scores for Each Sample Group and for College Board Population, SAT-M



the entries between 70 and 80. The private schools showed the greatest average variation, both for SAT-V and for SAT-M. This could validly reflect greater heterogeneity among the private schools when compared to the public ones. While the public schools are tied to stability of community, the private schools vary in the extent to which they serve any defined local community. The range of values in a number of relevant characteristics (size, location, average income of parents, etc.) was probably greater for the private schools than for the public schools.

Table 3. Standard Deviations of the Sample Groups for SAT-M and SAT-V by Year

	Experimental schools		Comparison schools		Private schools	
	V	M	V	M	V	M
1960	69	90	84	78	87	92
1962	83	75	74	69	91	96
1964	76	85	75	88	80	89
1966	81	92	83	68	90	88
1968	87	76	72	67	88	82
1970	78	70	89	80	91	104
1972	70	71	73	77	82	92
1974	81	82	70	74	88	93

The comparison schools tend to show somewhat less variation within samples on SAT-M, when compared to the experimental schools, and to show somewhat more variation on SAT-V. In view of the sampling procedures, which imposed somewhat more relaxed standards for "stability" on these schools, it might be anticipated that they would constitute a more varied sample.

Perhaps the most striking finding from these tables is the room for measurement at the top of the College Board scale. It is clear that these samples are not representative samples of valedictorians and salutatorians generally. The effort at selecting stable schools would by itself be anticipated to distort selections. The schools picked tended to be smaller and to be located in smaller communities. In view of this smallness, it is probably the case that in the public and private schools here selected it required less average ability to win the competition for top academic honors than might be required in large, urban, elite and science-oriented high schools. Nonetheless, the data show that valedictorians and salutatorians tend to average in the 600s, on both verbal and mathematical tests. They average well above average, and yet there is considerable room for measurement above them in the score scale. However, in connection with the phenomenon of the peaks referred to earlier, there was a need to consider the possible effects of the College Board "800" ceiling. Because the College Board SAT scale is a statistical system, it is not possible to control precisely the scale values of the top scores. These tend to equate the values over 800. In fairness to the top candidates, it is standard policy to report any score of 800 or over, as 800. However,

there are occasional test forms for which the maximum scaled score falls below 800, and in certain cases this value is sufficiently close to 800 so that it is allowed to remain. Under certain circumstances, then, such practices of setting arbitrary ceilings could introduce artificial constraints on the data, so that a year with a lower possible top score produced a decline in the average. The wide range of reported scores in this study made this unlikely. To be certain, however, records of the maximum possible scaled scores were examined for the years in question. In no year was there more than a single administration where the phenomenon was observed, and it is unlikely that such a single administration could alter the effects for the total group.

An initial analysis of variance, undertaken with about 80 percent of the data received, indicated significant differences in comparisons of the years, types of schools, the sexes, and the two ranks in class -- valedictorian and salutatorian. The interest in the study lay not simply in the variation among years, but in trends in the data. Accordingly, it was decided in subsequent analyses to test the contribution to prediction of the best fitting curves. Since there were eight years, it was possible to fit curves of increasing complexity from a straight line to a seventh order polynomial equation.

It was further decided to examine the school relationships in terms of two contrasts: the difference between the two public school groups, experimental and comparison, and the difference between the private schools and the combined public schools. Sex and rank were retained as main effects. Table 4 presents the regression weights and the t-values associated with these weights for each major factor in the analysis, for SAT-V and for SAT-M, using the overall sample.

Table 4. Regression Weights and Associated t-Values for Main Factors in the Analyses of Variance

Factor	SAT-verbal		SAT-mathematical	
	Weight	t	Weight	t
Overall mean	625.10	287.20†	651.85	322.25†
Contrast A:				
Experimental vs. comparison	43.52	8.31†	31.39	6.45†
Contrast B:				
Public vs. private	26.39	5.82†	-4.80	1.14
Sex	-1.85	-0.86	24.83	12.36†
Rank				
(Valedictorian/salutatorian)	7.57	3.58†	10.97	5.59†
Year:				
Linear term	-4.23	-0.65	14.83	2.48*
Quadratic term	-21.87	-3.42†	-13.27	-2.23*
X^3 - term	-1.02	-0.16	3.48	0.60
X^4 - term	5.56	0.91	3.41	0.60
X^5 - term	1.75	0.29	-8.92	-1.60
X^6 - term	6.03	1.03	2.43	0.45
X^7 - term	-13.51	-2.34*	-11.21	-2.09*

*$p < .05$
†$p < .01$

The SAT-M score was, on the average, somewhat higher than the SAT-V. This conforms to the pattern for the total candidate population. The gap separating the two means, approximately 25 points, is approximately the same as the 29 points difference for the total population in recent years.

Significant effects were observed for the two contrasts on SAT-V, and for the Experimental versus Comparison contrast on SAT-M. In general, comparison school valedictorians and salutatorians averaged about 40 points higher for SAT-V, about 30 points higher for SAT-M. Since the comparison schools were larger and more urban, this was to be expected. For the other contrast, there was a significant superiority for private school valedictorians and salutatorians on SAT-V, but not on SAT-M.

The differences between the sexes were on the order of the differences observed for the larger population, and in the same direction. Females showed a nonsignificant superiority on SAT-V, males a significant one on SAT-M. In the absence of a knowledge of courses taken, the attribution of these observed differences to causal factors cannot be attempted. Recent years have seen the virtual disappearance of the sex difference in SAT-V. The difference in SAT-M has remained, but the sensitivity of this variable to recency of appropriate course work has long been established (Dyer, 1953; French and Dear, 1958). If nothing else, the data suggest that female valedictorians may retain the general pattern of less mathematical course work which holds for females in the total population.

Rank in class yields significant differences both for SAT-V and SAT-M. This is an extremely interesting finding, since it attests to the sensitivity of these tests even among elite groups. The relevance of the Scholastic Aptitude Test is sometimes challenged for the extreme subgroups at the top and bottom of the candidate distribution. As this study shows, the tests differentiate by small but significant amounts between the approximately 800 valedictorians and the approximately 750 salutatorians. The differentiation is about 8 points in favor of valedictorian on SAT-V, about 11 points on SAT-M. Clearly the tests and the schools seem to be in agreement. Since the distinction that is being made is often a very difficult one, involving individuals of quite similar attainments, the ability of the tests to make the appropriate distinction is significant.

The year effects are described in terms of the significance of each of the seven weights that would be used in a seventh-degree equation to describe the data. Each such weight may be independently tested.

The linear (x) term is significant for the SAT-Mathematical curve, but not for SAT-Verbal. The quadric (x^2) term is significant for both tests. This tends to suggest that for each test the data are well described by a curve that sees the rate of decline increasing over time. Such curves have tended to describe the College Board population as a whole.

A perplexing aspect of the analysis was the significance of the "septic" (x^7) term. The effect of this term on the fit of the curve is difficult to visualize. It is found, however, in both SAT-V and SAT-M. It seems to be enhancing the fit of the equation to the two "peak" years, 1964 and 1968. The finding of such peaks in these special samples was not anticipated. It does not seem to be reflected in the means of the College Board total population. It is possible that it is a phenomenon related to the scaling and equating of the tests although no mechanism by which this could happen was apparent. Since the interest was in the more regular trends in the data, this seventh degree term was ignored in the subsequent analysis.

In addition to the main effects, there are a number of interactions to be tested. Since the years effect is analyzed into seven components, the basic interactions are expanded to 37 second order, 28 third order terms. Table 5 presents those interactions that were significant. Of the small number of significant interactions, only that between the private-public contrast and sex was significant in both analyses. It was considered likely that this was a product of the nature of private schools, with some schools coeducational, others all male, yet others all female.

Table 5. Regression Weights and Associated t-Values for the Significant Interactions

Interaction	Weight	t
SAT-verbal:		
Contrast B x Sex.	-17.68	-3.74†
Year (X^6) x rank.	6.19	2.30*
Year (linear) x contrast A.	-34.01	-2.44*
Year (linear) x contrast B.	-36.96	-2.12*
SAT-mathematical:		
Year (quadratic) x contrast A	-39.88	-2.49*
Sex x contrast B.	-9.96	-2.26*
Year (X^6) x contrast A x rank	28.74	2.00*

*$p < .05$
†$p < .01$

It is probably appropriate to comment on some of the nonsignificant interactions. First, it should be noted that there was no significance to the interaction between sex and the experimental versus comparison contrast. The changes over time in these two samples are not statistically different for the sexes for either test. While the sexes differ in performance on the mathematical test, their rate of change over time is, within the limits of probability, the same.

The absence of a significant interaction between sex and rank, for either SAT-V or SAT-M is also interesting. This can be interpreted as indicating that the processes that identify and designate valedictorians and salutatorians are indistinguishable for the sexes from the standpoint of test performance. Put another way, there is no evidence that anything "extra" is required, in terms of SAT performance, to be a valedictorian or salutatorian depending on sex. The test differentiates the ranks and a single differentiation applies regardless of sex.

In the next phase of the analysis, the annual means for each sample were adjusted by subtracting the corresponding annual mean for the total College Board population. The effect of this process is such that if there is a trend in the data of a given sample, and if it matches that of the total Board population, it will be removed. There will be no significant effect for year in the ensuing analysis. At the same time, attention was restricted to a few designated interactions, rather than the complete analysis. Table 6 presents the principal results.

Table 6. Regression Weights and Associated t-Values for the Total Sample: Scores Adjusted for College Board Population Means

Factor	Weight	t
SAT-verbal:		
Overall Mean.	163.46	74.82†
Contrast A: experimental vs. comparison	43.50	8.31†
Contrast B: public vs. private.	28.02	6.11†
Sex	-2.18	-1.00
Rank.	7.55	3.59†
Year (linear term).	36.27	5.58†
Year (quadratic term)	-14.59	-2.32*
Interactions:		
Year(linear) x contrast B.	-30.63	-2.33*
Year (quadratic) x contrast A.	-28.66	-1.87
Year (quadratic) x contrast B.	15.15	1.17
Contrast B x sex	-17.05	3.75†
SAT-mathematical:		
Overall mean.	161.77	79.91†
Contrast A: experimental vs. comparison	31.52	6.47†
Contrast B: public vs. private.	-4.79	-1.13
Sex	24.81	12.35†
Rank.	10.99	5.58†
Year (linear term).	17.05	6.15†
Year (quadratic term)	-4.02	-0.69
Interactions:		
Year (linear) x contrast B	-25.26	-2.06*
Year (quadratic) x contrast A.	-30.21	-2.12*
Year (quadratic) x contrast B.	-1.58	-0.13
Contrast B x sex	-10.02	-2.36*

*p < .05
†p < .01

The results of the analysis in Table 6 essentially show that the adjusted data retains the principal structure of the initial analysis. No main effect is shifted in significance level. The interactions indicate significant effects for the contrasts with some of the terms in the descriptive equation. Private versus public contrast is significantly interactive with the linear term, but not the quadratic term for both tests. The experimental versus comparison contrast shows significant interaction with the quadratic term for the SAT-M, and a borderline value for SAT-V. The interaction of the private versus public contrast and sex continues to be strongly interactive in this analysis.

Since the contrast-year interactions had proved significant, different curves were needed to describe the changes over time for the three samples. Accordingly, a last analysis was made separately for each sample on each test. This analysis retained the use of adjusted scores. Because the emphasis is on comparisons of samples, the results of these separate analysis of variance tables are recast in Table 7.

Table 7. Regression Weights and Associated t-Values for Five Factors in Each Sample

Factor	Sample	SAT-verbal Regression weight	SAT-verbal t	SAT-mathematical Regression weight	SAT-mathematical t
Overall mean.	experimental	130.80	36.24†	147.33	44.51†
	comparison	172.40	46.44†	175.81	52.86†
	private	182.59	44.25†	159.51	39.91†
Sex.	experimental	3.60	1.05	29.75	9.46†
	comparison	4.09	1.14	26.29	8.16†
	private	-13.71	-3.33†	18.15	4.56†
Rank	experimental	7.91	2.36*	13.13	4.27†
	comparison	7.07	2.00*	11.08	3.51†
	private	7.44	1.88	8.56	2.23*
Linear curve	experimental	41.00	3.77†	40.36	4.05†
	comparison	43.03	3.81†	48.22	4.77†
	private	7.36	0.64	17.46	1.56
Quadratic curve	experimental	-3.45	-0.32	9.19	0.94
	comparison	-39.17	-3.54†	27.09	-2.73†
	private	-0.06	-0.01	-5.95	-0.54

*$p < .05$
†$p < .01$

The comparisons of the overall means in Table 7 establish that the experimental valedictorians were less able than the comparison or private school valedictorians on both SAT-V and SAT-M. The patterns of sex differences were as anticipated, with established differences for SAT-M. Private school female valedictorians and salutatorians were significantly more able than their male counterparts on SAT-V, but this difference was not significant for the other samples.

The findings with respect to rank are also in keeping with previous analyses. There is one nonsignificant value of t for the private school sample, but in view of the overall pattern, this single finding does not alter the general conclusion that valedictorians and salutatorians do differ in all samples.

The major interest lies in the trend lines that describe these "adjusted" scores. This analysis shows that the private schools do not differ significantly from the general trend of College Board decline. None of the four tests of equation weights is significant for the private schools. For the other two samples, there <u>are</u> significant weights, indicating that the trend for the total population cannot describe these special samples. For the comparison schools there are significant weights for both linear and quadratic terms. For the experimental schools, only the linear term is significant.

The general effect of this analysis of adjusted scores is to suggest that the comparison schools show less decline at the outset but a tendency, in the later years, to be declining more rapidly than the total Board population. The experimental schools, however, show positive linear trends over time. The distance between the experimental schools and the total Board population is constantly expanding over the study. This suggests but does not establish that there is no decline for these schools. These adjusted data cannot establish the exact nature of the experimental curve because they are relative data, compiled by subtracting the mean of the total College Board group in each year.

The empirical curves for the unadjusted scores, presented in Figures 1 and 2, contain a number of fluctuations from year-to-year that make it difficult to sense the trends involved. Accordingly, best-fitting curves were calculated for both SAT-V and SAT-M for each sample group and for the total College Board population. On the basis of the earlier analyses, the curves for private and experimental schools were simple linear curves, those for the comparison schools and the total Board population were quadratic. The specific equations used are presented in Table 8. Figures 3 and 4 present the results graphically.

Table 8. Equations of Best-Fitting Curves for Each Sample Group and for Total Board Population

SAT-verbal	
Experimental.	$Y = 594.38 + .63$ (year 1967)
Comparison.	$Y = 656.53 + .76$ (year 1967) $- .96$ (year 1967)^2
Private	$Y = 643.25 - 1.87$ (year 1967)
Total College Board .	$Y = 468.63 - 2.52$ (year 1967) $- .22$ (year 1967)^2
SAT-mathematical	
Experimental.	$Y = 633.00 + 1.82$ (year 1967)
Comparison.	$Y = 678.31 + 2.32$ (year 1967) $- .63$ (year 1967)^2
Private	$Y = 656.13 - 0.35$ (year 1967)
Total College Board .	$Y = 494.50 - 1.50$ (year 1967) $- .14$ (year 1967)^2

The curves show that the scores for valedictorians and salutatorians in the experimental school are best described by consistent patterns of increase over the years 1960-1974. This increase is slight, but it indicates that for these schools the pattern is not one of less decline, but of no decline at all. The experience of the comparison sample is somewhat complex in an initial increase and then a decrease. It was the only sample group best described by a curve of complexity higher than linear. The curve slopes up and down quite sharply. An inspection of Figures 1 and 2 indicates that a single year, 1960, is strongly influencing this picture. If this year were removed the general shape might remain the same but the arch of the parabola would be much flatter. The private schools showed a small but steady decline in both SAT-V and SAT-M. This decline is best described by a linear fit, but the pattern is not statistically inconsistent with a random fluctuation from the decline exhibited by the total College Board population.

Figure 3. Best Fitting Curves for Each Sample Group and for College Board Total Population, SAT-V

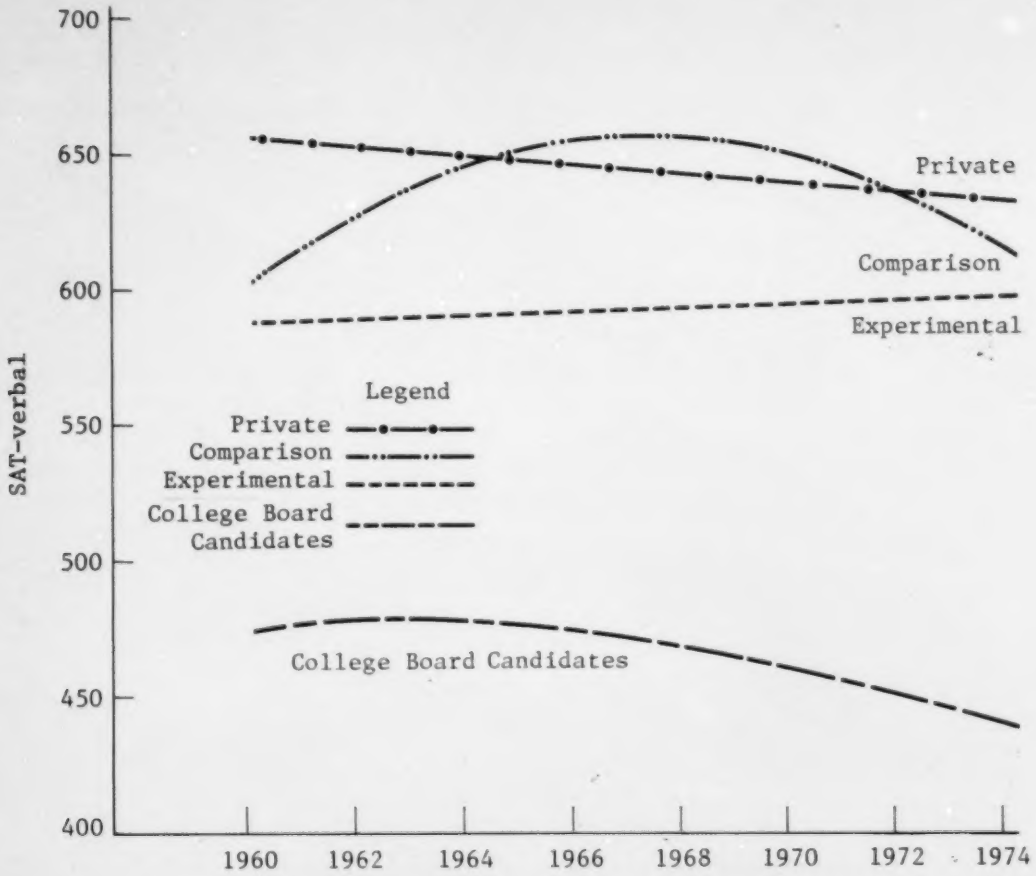
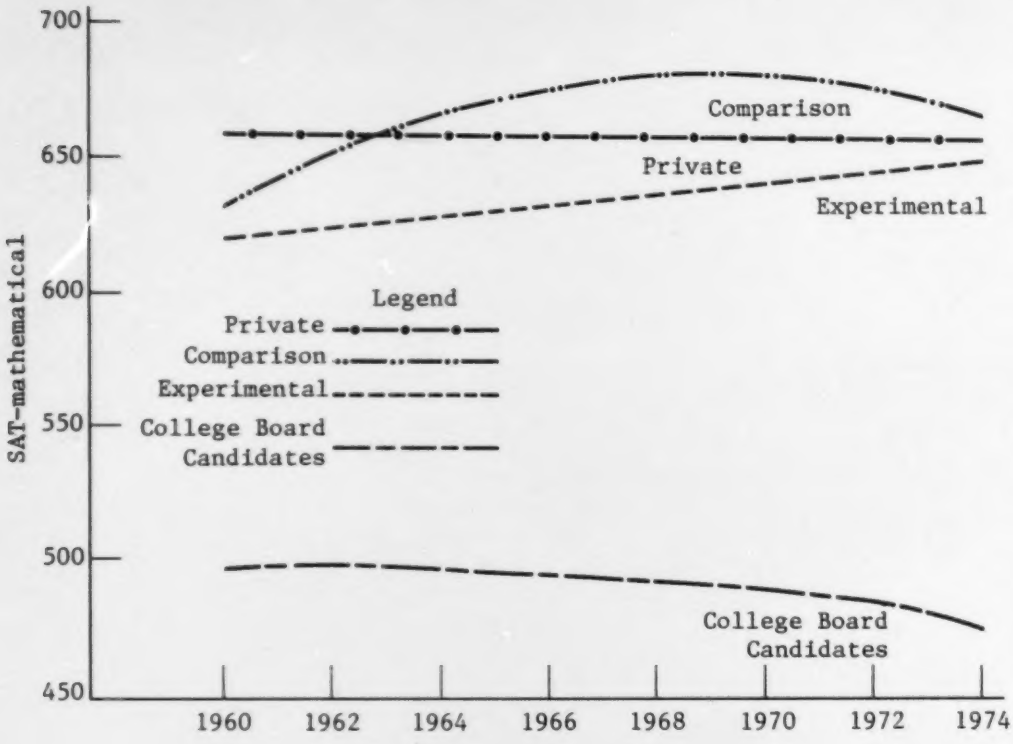


Figure 4. Best Fitting Curves for Each Sample Group and for College Board Total Population, SAT-M



The curve which describes the total College Board population is a quadratic indicating a gradual intensifying of the rate of decline. The curve, being based on the even-numbered years from 1960 to 1974 is of particular interest because it affords a projection, beyond these years to the experience in 1976. The predictions for 1976 are, for SAT-V, 428, and for SAT-M, 469. These may be contrasted with the reported values of 429 and 470. Thus, the observed values correspond so closely to the theoretical as to suggest that the process of the decline was still underway in 1975-76 and producing decrements well described by the curve.

This study was intentionally exploratory and tentative. Nonetheless, it supports conclusions with regard to feasibility and to the presence or absence of decline in the special samples. The conclusions concerning feasibility would be:

1. Enough schools retain sufficient records of test performance to provide for a feasible sampling of valedictorians and salutatorians during 1960-74.

2. Not enough schools retain organized records of test performance to permit an indepth sampling of ranks lower than valedictorian/salutatorian.

The conclusions concerning score decline would be:

1. Valedictorians and salutatorians of experimental schools specifically selected for demographic stability do not show a score decline, and in fact are best described by linear curves with modest increases.

2. Comparison schools show decline but on a pattern statistically significant from that of the total Board population.

3. The specially selected private schools show a decline not statistically different from that of the total Board population.

4. The curve that describes the rate of decline for the total Board population in 1960-1974 quite accurately predicts the means for 1976.

Other conclusions worthy of note are:

1. The Scholastic Aptitude Test is sufficiently sensitive to ability at the upper levels of scholastic performance to differentiate valedictorians and salutatorians in samples of these sizes.

2. While these select students show sex differences similar to those in the total population, there is no evidence of a sex-rank interaction indicating that it is any harder or easier to become a valedictorian or salutatorian depending on sex.

The failure to observe a score decline for valedictorians and salutatorians in specially selected schools lends support to the views that the decline is related to patterns of social change. It must be cautioned, however, and strongly, that this conclusion may be simplistic. The kind of specialized sampling carried out in this study is fraught with hidden consequences. It seems plausible that the communities selected have experienced less social change, and it seems plausible that their valedictorians and salutatorians show less decline because of this reduced change. But the conjecture is only supported, not proven, by the data.

The study indicates that a larger and more comprehensive effort to understand the test-taking patterns of the elite students is feasible and can lead to analyses that improve significantly our understanding of the forces underlying the decline. It is doubtful that there are large numbers of stable communities with large SAT-taking groups to add to the schools considered here. But a random national sample of schools could provide a base from which to undertake demographic analyses of greater

precision. For example, do schools that are considered demographically "unstable" show a greater rate of decline than do other schools?

References

Dyer, H.S., "Does coaching help?" College Board Review, No. 19, 1953, pp. 331-335.

French, J.W., and Dear, R.E., "Effect of Coaching on An Aptitude Test." Educational and Psychological Measurement, No. 19, 1959, pp. 319-330.

APPENDIX A

Letter sent to Schools, May 1976
Outline of the Study
Special Request
Community Characteristics, Form A
Educational Characteristics, Form B
Instructions for Score Report, Form C-1, top 10 percent
Instructions for Score Report, Form C-2, top 20 percent
Instructions for Score Report, Form C-3, top 30 percent
Score Report, Form C

EDUCATIONAL TESTING SERVICE PRINCETON, N.J. 08540

Area Code 609
921 - 9000
CABLE-EDUCTESTSVC

Developmental Research Division

May 3, 1976

Declining scholastic aptitude and achievement test scores have received much attention in the last few years. Concerned by the situation, the College Entrance Examination Board has established a panel of prominent educators to review the factors associated with the decline. Under the supervision of this panel, a number of studies are being conducted.

We are writing to request your participation in a study of declining scores for selected populations. As the accompanying material indicates, we are interested in the score patterns of students in schools where there has been little change in the demographic make-up of enrollments. Your school was chosen because census data indicates your community may be considered "stable" in terms of its social and economic characteristics.

As the accompanying outline shows, we have developed three forms for recording information about the characteristics of your community, your school, and a form for recording SAT scores for every other year from 1960 through 1974. We hope that you will be able to answer the questions about community and school characteristics and that an appropriate test officer can complete the score report forms.

We do not require the names of any individual students, only verbal and math scores, rank in class, and sex. We will not reveal the scores of any school to others. However, we will prepare a report for you, providing your school's score averages, those averages achieved by all schools in the sample, and a list of participating schools.

Your cooperation will help us better understand the score decline. If you have any questions about the study, please call either of us collect at (609) 921-9000.

Sincerely,

Thomas F. Donlon
Senior Research Psychologist

Gary J. Echternacht
Research Psychologist

Enclosures

Outline of the Study

Interpreting SAT mean data over a long period of time is made difficult by the shifts in the composition of the group from year to year. As more and more students elect to seek a college education, the groups become more and more diverse. It is possible that a substantial portion of the decline is attributable to this shift in the nature of the group. No research study can fully solve this problem. However, we seek to reduce variability by focussing on students with specific characteristics in terms of academic attainment. Essentially, this focus is achieved by limiting the sample to students with a defined rank in class. Is the decline observed, for example, in samples of students all of whom were valedictorian students standing first in their class? Is it observed for samples of students who rank in the top 10%? If such samples can be identified, it may be assumed that they are less subject to year to year variability than the self-selected groups who attempt College Board Tests. Further, the study attempts to identify schools for which the meaning of rank in class may have been more consistent over the years: schools in communities which have not experienced marked shifts in racial or ethnic composition, in socioeconomic status, in the typical occupations of family breadwinners, etc.

We ask that schools supply data in the specific formats we request. Our project will combine the reports of individual schools into a single coherent report. The initial phase of our study will focus on approximately 60-75 schools. If it is successful, a larger extension of the study will be proposed.

Special Request

Throughout this study we have tried to preserve the anonymity of individual students. However, we have learned through our advisory panel that considerable interest is focussed on the very able valedictorians and salutatorians. It has been suggested that the winning of such honors, by virtue of its publication in the news media, is a matter of public record. We would like to contact a sample of these students, to learn more about them. If school policy permits the release of such data to the College Entrance Examination Board and to the Educational Testing Service, we would like to request the names and addresses of the valedictorians and salutatorians reported in Form C. We hold that this release is consistent with school policy such as the following, formulated by a large metropolitan school district in California:

> Organizations conducting studies for, or on behalf of, educational agencies or institutions to develop, validate, or administer predictive tests, administer student aid programs, and to improve instruction. (Such studies must not permit personal identification of students and their parents by persons other than those conducting studies. Information must be destroyed when no longer needed for the purpose for which it is obtained.)

We would conform to the conduct stipulated in this policy. We would be pleased to attempt to resolve any problems connected with this special request by telephone.

COMMUNITY CHARACTERISTICS FORM A

We are especially interested in the degree to which the socioeconomic character of your school district and community have changed over the past 15 years. Although few areas of our country have been immune to social and economic change during the past 15 years, some communities and school districts have more or less retained their social and economic characteristics. In particular their school enrollments have neither increased or decreased dramatically, the racial composition of the student body has remained the same, the socioeconomic status of the students has remained the same, and the general economic character of the community has remained the same (e.g., predominanatly agricultural products, manufacturing, mining, retail or wholesale trade, transportation, etc.) In the space provided below, please indicate the degree that you would say your school district has remained socially and economically stable over the past 15 years.

Very Unstable	Unstable	Stable	Very Stable
☐	☐	☐	☐

Also, answer the following specific questions.

	Yes	No
1. Has your school district's enrollment increased or decreased by more than 10% over the last 15 years?	☐	☐
2. Has the ethnic or racial composition of your enrollment changed by more than 3% over the last 15 years.	☐	☐
3. Has the socioeconomic status of your enrollment changed substantially over the last 15 years?	☐	☐

4. Please indicate by checking one box below the major economic activity of your community.

Agricultural Products	Manufacturing	Mining	Retail/Wholesale Trade	Transportation
☐	☐	☐	☐	☐

Other - specify _____

_____

_____

In the space provided below would you please provide a brief description of the social and economic character of your community and how it may have changed over the past 15 years.

EDUCATIONAL CHARACTERISTICS FORM B

We are interested in changes in the schools themselves, particularly as these center on concepts of academic excellence. It is inconceivable that education has not changed extensively in process during the years 1960-75. Our study cannot assume therefore, that the best students of 1960 are equivalent to those of 1974. But we do wish to identify schools which have maintained fairly stable educational goals over the years, particularly as these relate to preparation for college. Please characterize your school using the scales below.

In general, the meaning of academic excellence, such as a superior rank in class, was

☐	☐	☐	☐
Very Unstable	Unstable	Stable	Very Stable

The importance attaching to academic excellence, in the sense of recognition for it, was

☐	☐	☐	☐
Very Unstable	Unstable	Stable	Very Stable

Has the reading load of your students changed markedly over the last 15 years? Yes ☐ No ☐

Has the writing load of your students changed markedly over the last 15 years? Yes ☐ No ☐

In the space below we would appreciate a brief comment on the constancy of standards of academic excellence in your school over the years in question. For example, in computing rank in class are certain kinds of courses excluded? Do you feel that rank in class, academic honors generally have been treated comparably over the years?

INSTRUCTIONS FOR SCORE REPORT, FORM C-1

Please complete the attached form, entering the SAT data for the top 10% of the graduating class in each of the eight designated years. Your graduating class will vary in size from year to year, so that a different number of records will be reported for May, 1960, than for 1964. The number of reports should be determined by computing 10% of the class and rounding to a whole number.

The forms provide enough space for a graduating class of 250 students, 25 ranks. However, a few schools may need more entries. Simply attach a second sheet for the year in question.

If the tests were never taken, enter N.A. for "not available". If the tests were taken, but the results cannot be supplied, enter "Missing".

INSTRUCTIONS FOR SCORE REPORT, FORM C-2

Please complete the attached form, entering the SAT data for the top 20% of the graduating class in each of the eight designated years. Your graduating class will vary in size from year to year, so that a different number of records will be reported for May, 1960, than for 1964. The number of reports should be determined by computing 20% of the class and rounding to a whole number.

Each form provides enough space for 25 ranks, simply add additional pages as needed for larger classes.

If the tests were never taken, enter N.A. for "not available". If the tests were taken, but the results cannot be supplied, enter "Missing".

INSTRUCTIONS FOR SCORE REPORT, Form C-3

Please complete the attached form, entering the SAT data for the top 30% of the graduating class in each of the eight designated years. Your graduating class will vary in size from year to year, so that a different number of records will be reported for May, 1960, than for 1964. The number of reports should be determined by computing 30% of the class and rounding to a whole number.

Each form provides enough space for 25 ranks, simply add additional pages as needed for larger classes.

If the tests were never taken, enter N.A. for "not available". If the tests were taken, but the results cannot be supplied, enter "Missing".

FORM C

Score Report

School _____

Year _____			Year _____		
Rank	V	M	Sex	V	M	Sex
___	___	___	___	___	___	___
___	___	___	___	___	___	___
___	___	___	___	___	___	___
___	___	___	___	___	___	___
___	___	___	___	___	___	___
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APPENDIX B

Letter sent to Schools, September 1976
Outline of Study
Instructions for Score Report, Form C
Form C. Score Report for Valedictorians/
Salutatorians

EDUCATIONAL TESTING SERVICE PRINCETON, N.J. 08540

Area Code 609
921 - 9000
CABLE-EDUCTESTSVC

Developmental Research Division

September 23, 1976

In late May we sent you a request for some information in connection with a study of declining scholastic aptitude and achievement test scores. As you know, this phenomenon has received much attention in recent years. Concerned by the situation, the College Entrance Examination Board has established a panel of prominent educators to review the factors associated with the decline. Under the supervision of this panel, a number of studies are being conducted.

Our request invites your participation in a study of declining scores for selected populations. As the accompanying material indicates, we are interested in the score patterns of students in schools where there has been little change in the demographic make-up of enrollments. Your school was chosen because census data indicates your community may be considered "stable" in terms of its social and economic characteristics.

In response to communications from the schools and the panel of educators, we have modified our request somewhat since May. We now seek information about sixteen students: the valedictorian and salutatorian in each of the even-numbered years from 1960 through 1974. We wish to learn the SAT-V and SAT-M scores for these students, or at least their names, so that we could look up their scores in our own records. We have developed three forms for recording information about the characteristics of your community, your school, and the SAT scores. We hope that you will be able to answer the questions about community and school characteristics and that an appropriate test officer can complete the score report forms.

We do not require the names of any individual students, only verbal and math scores, rank in class, and sex. We will not reveal the scores of any school to others. However, we will prepare a report for you, providing your school's score averages, those averages achieved by all schools in the sample, and a list of participating schools.

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Enclosures

Outline of the Study

Interpreting SAT mean data over a long period of time is made difficult by the shifts in the composition of the group from year to year. As more and more students elect to seek a college education, the groups become more and more diverse. It is possible that a substantial portion of the decline is attributable to this shift in the nature of the group.

No research study can fully solve this problem. However, we seek to reduce variability by focussing on students with specific characteristics in terms of academic attainment. Essentially, this focus is achieved by limiting the sample to students with a defined rank in class. Is the decline observed, for example, in samples of students all of whom were valedictorian students standing first in their class? For salutatorians? If such samples can be identified, it may be assumed that they are less subject to year to year variability than the self-selected groups who attempt College Board Tests. Further, the study attempts to identify schools for which the meaning of rank in class may have been more consistent over tne years: schools in communities which have not experienced marked shifts in racial or ethnic composition, in socioeconomic status, in the typical occupations of family breadwinners, etc.

We ask that school supply the scores or names of sixteen students: the valedictorian and salutatorian in each of eight even-numbered years from 1960 to 1974. Our project will combine the reports of individual schools into a single coherent report. The initial phase of our study will focus on approximately 60-75 schools. If it is successful, a larger extension of the study may be proposed.

COMMUNITY CHARACTERISTICS FORM A

We are especially interested in the degree to which the socioeconomic character of your school district and community have changed over the past 15 years. Although few areas of our country have been immune to social and economic change during the past 15 years, some communities and school districts have more or less retained their social and economic characteristics. In particular their school enrollments have neither increased or decreased dramatically, the racial composition of the student body has remained the same, the socioeconomic status of the students has remained the same, and the general economic character of the community has remained the same (e.g., predominanatly agricultural products, manufacturing, mining, retail or wholesale trade, transportation, etc.) In the space provided below, please indicate the degree that you would say your school district has remained socially and economically stable over the past 15 years.

Very Unstable	Unstable	Stable	Very Stable
☐	☐	☐	☐

Also, answer the following specific questions.

	Yes	No
1. Has your school district's enrollment increased or decreased by more than 10% over the last 15 years?	☐	☐
2. Has the ethnic or racial composition of your enrollment changed by more than 3% over the last 15 years.	☐	☐
3. Has the socioeconomic status of your enrollment changed substantially over the last 15 years?	☐	☐

4. Please indicate by checking one box below the major economic activity of your community.

Agricultural Products	Manufacturing	Mining	Retail/Wholesale Trade	Transportation
☐	☐	☐	☐	☐

Other - specify _____

_____

_____

In the space provided below would you please provide a brief description of the social and economic character of your community and how it may have changed over the past 15 years.

EDUCATIONAL CHARACTERISTICS FORM B

We are interested in changes in the schools themselves, particularly as these center on concepts of academic excellence. It is inconceivable that education has not changed extensively in process during the years 1960-75. Our study cannot assume therefore, that the best students of 1960 are equivalent to those of 1974. But we do wish to identify schools which have maintained fairly stable educational goals over the years, particularly as these relate to preparation for college. Please characterize your school using the scales below.

In general, the meaning of academic excellence, such as a superior rank in class, was

☐	☐	☐	☐
Very Unstable	Unstable	Stable	Very Stable

The importance attaching to academic excellence, in the sense of recognition for it, was

☐	☐	☐	☐
Very Unstable	Unstable	Stable	Very Stable

Has the reading load of your students changed markedly over the last 15 years? Yes ☐ No ☐

Has the writing load of your students changed markedly over the last 15 years? Yes ☐ No ☐

In the space below we would appreciate a brief comment on the constancy of standards of academic excellence in your school over the years in question. For example, in computing rank in class are certain kinds of courses excluded? Do you feel that rank in class, academic honors generally have been treated comparably over the years?

INSTRUCTIONS FOR SCORE REPORT, FORM C

Please complete the attached form, entering the SAT data for the valedictorian and salutatorian in each of the eight designated years.

If the tests were never taken, enter "No. Tested", but indicate the sex of the student. If the tests were taken, but the results cannot be supplied, enter "Missing". If the school had no valedictorian or salutatorian in a given year, enter "N.A." for not applicable.

FORM C

Score Report

School _____

		V	M	Sex
1960	Valedictorian	_____	_____	_____
	Salutatorian	_____	_____	_____
1962	Valedictorian	_____	_____	_____
	Salutatorian	_____	_____	_____
1964	Valedictorian	_____	_____	_____
	Salutatorian	_____	_____	_____
1966	Valedictorian	_____	_____	_____
	Salutatorian	_____	_____	_____
1968	Valedictorian	_____	_____	_____
	Salutatorian	_____	_____	_____
1970	Valedictorian	_____	_____	_____
	Salutatorian	_____	_____	_____
1972	Valedictorian	_____	_____	_____
	Salutatorian	_____	_____	_____
1974	Valedictorian	_____	_____	_____
	Salutatorian	_____	_____	_____